

pm

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-043-03484 County LINCOLN District DUVAL  
Quad GRIFFITHSVILLE 7.5' Pad Name BAYS, M.A. Field/Pool Name GRIFFITHSVILLE  
Farm name H.G ENERGY LLC Well Number 157  
Operator (as registered with the OOG) H.G. ENERGY LLC  
Address 5260 DuPONT ROAD City PARKERSBURG State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,232,189 M Easting 416,060 M  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing 4,232,007 M Easting 415,942 M

Elevation (ft) 945' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
N/A

Date permit issued 6/30/15 Date drilling commenced 10/7/15 Date drilling ceased 10/10/15  
Date completion activities began 10/21/15 Date completion activities ceased 10/23/15  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft 1140' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft 564'- 569' Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) N

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API 47-043 - 03484 Farm name H.G ENERGY LLC Well number 157

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	12 1/4"	11 5/8"	30'	Used	LS		Sand In
Surface	8 3/4"	7"	591'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2719.9'	New	J-55		N
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 50 sks to surface on 7" surface cement job. Did not circulate to surface on 4 1/2" cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Reg Neat	150	15.6	1.18	177	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	110/125	13.2/14.2	1.64/1.27	180/186	350'	8
Tubing							

Drillers TD (ft) 2753' Loggers TD (ft) 2747'

Deepest formation penetrated Berea Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 600'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

20 Centralizers every 88 from bottom on 4 1/2", Centralizer placed mid string on 7"

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

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**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	10/21/15	2576'	2584'	32	Berea

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	10/23/15	4	1130	2292	1314	1,000	146	

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Berea</u>	<u>2432'- 2454'</u> TVD	<u>2570'- 2592'</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas \_\_\_\_\_ mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
Sand/Shale	0	564	0	564	
Pittsburgh Coal	564	569	564	569	
Sand/Shale	569	1718	569	1794	
Big Lime	1718	1910	1794	2012	
Big Injun	1910	2022	2012	2140	
Shale	2022	2412	2140	2550	
Coffee Shale	2412	2432	2550	2570	
Berea	2432	2454	2570	2592	Drilled directional S 32.4° W a distance of 639'
Shale	2454	2615	2592	2753	
TD	2615		2753		

Please insert additional pages as applicable.

Drilling Contractor Decker Drilling  
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Weatherford International  
Address 11000 Performance PL City Youngstown State OH Zip 44502

Cementing Company Universal Services  
Address 14 Sewer Plant Rd City Buckhannon State WV Zip 26031

Stimulating Company Producers Service Corp.  
Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107  
Signature [Signature] Title Operations Manager Date 10/26/15

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Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

02/19/2016

Prepared for:  
 HG Energy  
 Dustin Hendershot  
 304-481-7342



Prepared by:  
 Producers Service Corp  
 Tony Lewellen  
 109 S. Graham St.  
 Zanesville, OH 43702  
 740-454-6253

INVOICE #:	19213
WELL NAME:	MA Bays #157
STATE & COUNTY:	Lincoln County, WV
TOWNSHIP/FIELD:	Griffithsville
DATE of SERVICE:	10/23/2015
CUSTOMER PO#	

Description	Notes	Amount	Units	Unit Cost	Total Cost
BLENDER CHARGE 0-10 BPM		1	EA		
FLUID PUMP CHARGE 0-3000 PSI MIN CHARGE 4 HRS		1	EA		
MILEAGE CHARGE PER UNIT ONE WAY	2 Units @ 66.6 Miles	133.3	MI		
SAND 20/40 OTTAWA		10	CWT		
SAND DELIVERY / TON MILES		33	TMILE		
IC ACID 15%		250	GAL		
ACID DELIVERY		4	HR		
PRO CLA LOK (KCL SUBSTITUTE)		10	GAL		
PRO NE-21		10	GAL		
IRONROL		50	LB		
PRO GEL 4		150	LB		
BUFFER I		50	LB		
BIO CLEAR 750		1	LB		
DATA VAN		1	STAGE		

Customer Approval: 